

**CLAIMS:**

1. A cascable optical amplifier arrangement, comprising a modular base amplifier arrangement constructed in single-mode technology and having at least one amplifier stage; and a high-power amplifier stage connected to the at least one  
5 amplifier stage of the base amplifier arrangement and having an active fiber and a least one pump signal source.

2. The cascable optical amplifier arrangement as claimed in claim 1, wherein at least one further high-power amplifier stage is connected to the high-power amplifier stage that is connected to the base amplifier arrangement.

10 3. The cascable optical amplifier arrangement as claimed in claim 2, wherein the high-power amplifier stages each have their own amplification control and/or power control.

15 4. The cascable optical amplifier arrangement as claimed in claim 3, wherein the amplification control and/or power control is produced either optoelectronically or purely optically.

5. The cascable optical amplifier arrangement as claimed in claim 1, wherein the high-power amplifier stages each have their own amplification control and/or power control.

20 6. The cascable optical amplifier arrangement as claimed in claim 5, wherein the amplification control and/or power control is produced either optoelectronically or purely optically.

7. The cascable optical amplifier arrangement as claimed in any one of claims 1 to 6, wherein the at least one pump signal source for pumping the active fibers of the high-power amplifier stages is connected to the input and to the output of  
25 the respective active fiber.

8. The cascable optical amplifier arrangement as claimed in any one of claims 1 to 6, wherein a filter serially connected upstream of the active fiber of the

high-power amplifier stages levels the gain spectrum of an optical signal to be amplified.

9. The cascadable optical amplifier arrangement as claimed in claim 7, wherein a filter serially connected upstream of the active fiber of the high-power amplifier stages levels the gain spectrum of an optical signal to be amplified.

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